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Images Description and Claims (122 Kb)

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT  
COOPERATION TREATY (PCT)

(11) WO 03/105659

(13) A2

(21) PCT/IL03/00515

(22) 17 June 2003 (17.06.2003)

(25) English

(26) English

(30) 60/389,214

17 June 2002  
(17.06.2002)

US

(43) 24 December 2003 (24.12.2003)

(51)<sup>7</sup> A61B

(54) ROBOT FOR USE WITH ORTHOPAEDIC INSERTS

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(81) AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO,  
CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR,  
HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV,  
MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PG, PH, PL, PT,  
RO, RU, SC, SD, SE, SG, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ,  
VC, VN, YU, ZA, ZM, ZW

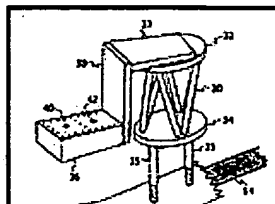
(84) ARIPO patent (GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW),  
Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent  
(AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU,  
MC, NL, PT, RO, SE, SI, SK, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA,  
GN, GQ, GW, ML, MR, NE, SN, TD, TG)

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(57) A robot-guided system to assist orthopaedic surgeons  
in performing orthopaedic surgical procedures on pre-  
positioned inserts, including for the fixation of bone  
fractures, and especially for use in long bone distal  
intramedullary locking procedures. The system provides a



mechanical guide for drilling the holes for distal screws in intramedullary nailing surgery. The drill guide is automatically positioned by the robot relative to the distal locking nail holes, using data derived from only a small number of X-ray fluoroscopic images. The system allows the performance of the locking procedure without trial and error, thus enabling the procedure to be successfully performed by less experienced surgeons, reduces exposure of patient and operating room personnel to radiation, shortens the intra-operative time, and thus reduces post-operative complications.



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